

PROCESS AND APPARATUS FOR C₂ RECOVERY

ABSTRACT OF THE DISCLOSURE

An improved process for separating a hydrocarbon bearing feed gas containing methane and lighter, C₂ (ethylene and/or ethane), and heavier components into a fraction containing predominantly methane and lighter components and a fraction containing predominantly C₂ and heavier hydrocarbon components including the steps of cooling and partially condensing and delivering the feed stream to a separator to provide a first residue vapor and a first liquid containing C₂, directing a first part of the first liquid containing C₂ into a heavy-ends fractionation column wherein the liquid is separated into a second hydrocarbon bearing vapor residue and a second liquid product containing C₂; further cooling the second part of the first liquid containing C₂ and partially condensing the second hydrocarbon bearing vapor residue; combining the cooled second part of the first liquid and partially condensed second hydrocarbon-bearing vapor residue and directing them to a second separator effecting a third residue and a third liquid; cooling and directing a first part of the third liquid into the light-ends fractionation column, to thereby condense C₂'s and heavier components while the methane is evaporated in the light-ends fractionation column to thereby obtain fourth residue vapor and liquid, heating and supplying the fourth liquid recovered from the light-ends fractionation column to the heavy-ends fractionation column as a feed thereto; conducting the second part of the third liquid to the heavy-ends fractionation column as a feed thereto.